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PATENT
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TECH CENTER 1600/2900

IN THE CLAIMS:

✓ Please cancel claims 115, 116 and 117 and add new claims 144 to 184 as below.

--144. A method for determining a cellular response profile for a target, comprising:

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- i) introducing said target in a first plurality of eukaryotic cells, wherein each eukaryotic cell comprises a fusion RNA of a cellular RNA transcript and a beta lactamase polynucleotide encoding a β -lactamase,
 - ii) inducing expression of said target in said first plurality of eukaryotic cells or contacting said first plurality of eukaryotic cells with a ligand, inhibitor or activator of said target,
 - iii) separating by FACS a second plurality of cells exhibiting an increase or decrease in expression of said β -lactamase in response to step (ii),
 - iv) identifying a plurality of cellular RNA transcripts fused to said beta lactamase polynucleotide present in said second plurality of cells,
- wherein said first plurality of eukaryotic cells was transfected with a viral vector, and
wherein said viral vector lacks a promoter to express said β -lactamase.

145. The method of claim 144, wherein said viral vector comprises a nucleic acid molecule comprising a splice acceptor sequence, a splice donor sequence,
wherein said splice acceptor sequence flanks, a nucleic acid sequence encoding said β -lactamase, and said splice donor sequence flanks said nucleic acid sequence encoding said β -lactamase and said splice acceptor sequence and said splice donor sequence are orientated between two long terminal repeat sequences.

146. The method of claim 145, wherein said viral vector further comprises an ATG translational start sequence for said beta lactamase.

147. The method of claim 146, wherein said viral vector further comprising a Kozak sequence located adjacent to said ATG translational start sequence.
148. The method of claim 145, wherein said viral vector further comprises an internal ribosome entry site.
149. The method of claim 145, wherein said viral vector further comprises a poly-adenylation site for said β -lactamase.
150. The method of claim 145, wherein said long terminal repeat sequences are self-inactivating.
151. The method of claim 145, wherein said splice acceptor sequence and said splice donor sequence flank said nucleic acid sequence encoding said β -lactamase and are oriented in a 5' to 3' direction between said long terminal repeat sequences.
152. The method of claim 145, wherein said at least one long terminal repeat is a deleted long terminal repeat.
153. The method of claim 145, wherein said viral vector is a retrovirus.
154. The method of claim 145, wherein said first plurality of eukaryotic cells comprises at least 10,000 cells.
155. The method of claim 145, wherein said first plurality of eukaryotic cells comprises at least 100,000 cells.
156. The method of claim 145, wherein said second plurality of cells exhibits at least a 1.5 fold change in β -lactamase expression in response to the induction of

expression of said target in said first plurality of eukaryotic cells or contacting said first plurality of eukaryotic cells with a ligand, inhibitor or activator of said target.

157. A method for determining a cellular response profile for a chemical, comprising:
- i) contacting said chemical with a first plurality of eukaryotic cells, wherein each eukaryotic cell comprises a fusion RNA of a cellular RNA transcript and a beta lactamase polynucleotide,
 - ii) separating by FACS a second plurality of cells exhibiting an increase or decrease in expression of β -lactamase in response to contact with said chemical,
 - iii) identifying one or more cellular RNA transcripts fused to said beta lactamase polynucleotide present in said second plurality of cells,
- wherein said first plurality of eukaryotic cells was transfected with a viral vector, and,
- wherein said viral vector lacks a promoter to express said β -lactamase.
158. The method of claim 157, wherein said viral vector comprises a nucleic acid molecule comprising a splice acceptor sequence, a splice donor sequence,
- wherein said splice acceptor sequence flanks, a nucleic acid sequence encoding said β -lactamase, and said splice donor sequence flanks said nucleic acid sequence encoding said β -lactamase and said splice acceptor sequence and said splice donor sequence are orientated between two long terminal repeat sequences.
159. The method of claim 158, wherein said viral vector further comprises an ATG translational start sequence for said β -lactamase.
160. The method of claim 159, wherein said viral vector further comprising a Kozak sequence located adjacent to said ATG translational start sequence.

161. The method of claim 158, wherein said viral vector further comprises an internal ribosome entry site.
162. The method of claim 158, wherein said viral vector further comprises a polyadenylation site for said β -lactamase.
163. The method of claim 158, wherein said long terminal repeat sequences are self-inactivating.
164. The method of claim 158, wherein said splice acceptor sequence and said splice donor sequence flank said nucleic acid sequence encoding said β -lactamase and are oriented in a 5' to 3' direction between said long terminal repeat sequences.
165. The method of claim 158, wherein said at least one long terminal repeat is a deleted long terminal repeat.
166. The method of claim 158, wherein said viral vector is a retrovirus.
167. The method of claim 158, wherein said first plurality of eukaryotic cells comprises at least 10,000 cells.
168. The method of claim 158, wherein said first plurality of eukaryotic cells comprises at least 100,000 cells.
169. A method for a screening test compounds for activity as an activator or inhibitor of a target, comprising:

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- i) introducing said target in a first plurality of eukaryotic cells, wherein each eukaryotic cell comprises a fusion RNA of a cellular RNA transcript and a beta lactamase polynucleotide,
 - ii) inducing expression of said target in said first plurality of eukaryotic cells or contacting said first plurality of eukaryotic cells with a ligand, inhibitor or activator of said target,
 - iii) separating by FACS a second plurality of cells exhibiting an increase or decrease in expression of β -lactamase in response to step (ii),
 - iv) contacting a cell derived from said second plurality of cells with a test chemical,
 - v) optionally inducing expression of said target in said cell or contacting said cell with a ligand, inhibitor or activator of said target,
 - vi) determining whether said test chemical increases or decreases β -lactamase activity compared to a control cell which was not contacted with said test chemical,
- wherein said first plurality of eukaryotic cells was transfected with a viral vector, and
- wherein said viral vector lacks a promoter to express said β -lactamase.

170. A method for developing a cell sensor panel, comprising:

- i) introducing a target in a first plurality of eukaryotic cells, wherein each eukaryotic cell comprises a fusion RNA of a cellular RNA transcript and a beta lactamase polynucleotide encoding a β -lactamase,
- ii) inducing expression of said target in said first plurality of eukaryotic cells or contacting said first plurality of eukaryotic cells with a ligand, inhibitor or activator of said target,
- iii) separating by FACS a second plurality of cells exhibiting an increase or decrease in expression of said β -lactamase in response to step (ii),

iv) selecting cells for said cell sensor panel from said second plurality of cells exhibiting at least a 1.5 fold change in β -lactamase expression in response to the induction of expression of said target in said clonal cells, or in response to exposure of said clonal cells to a ligand, inhibitor or activator for said target, and

wherein said first plurality of eukaryotic cells was transfected with a viral vector, and wherein said viral vector lacks a promoter to express said β -lactamase.

171. A cell sensor panel, comprising,

a plurality of clonal cells, wherein each clonal cell comprises a distinct fusion RNA of a cellular RNA transcript and a beta lactamase polynucleotide encoding a β -lactamase, and

wherein said clonal cells exhibit at least a 1.5 fold change in β -lactamase expression in response to the induction of expression of said target in said clonal cells, or in response to exposure of said clonal cells to a ligand, inhibitor or activator for said target, and

wherein said clonal cells, were selected from a population of cells transfected with a viral vector, and wherein said viral vector lacks a promoter to express said β -lactamase.

172. The cell sensor panel of claim 171, wherein said panel further comprises at least one cell line wherein said β -lactamase expression is under the control of a response element.

173. The cell sensor panel of claim 171, wherein said panel comprises at least 10 clonal cells.

174. The cell sensor panel of claim 171, wherein said panel comprises at least 50 clonal cells.
175. The cell sensor panel of claim 171, wherein said panel is present in a two dimensional array.
176. The cell sensor panel of claim 175, wherein said two dimensional array is formed within a multiwell plate.
177. The cell sensor panel of claim 171, wherein said clonal cells are derived from embryonic or hematopoietic stem cells.
178. A cell sensor panel, comprising,
a plurality of clonal cells, wherein each said clonal cell comprises a distinct fusion RNA of a cellular RNA transcript and a beta lactamase polynucleotide encoding a β -lactamase, and
wherein said clonal cells exhibit at least a 1.5 fold change in β -lactamase expression in response to contact of a test chemical with said clonal cells, and
wherein said clonal cells, were selected from a population of cells transfected with a viral vector, and wherein said viral vector lacks a promoter to express said β -lactamase.
179. The cell sensor panel of claim 171, wherein said panel comprises at least 10 clonal cells.
180. The cell sensor panel of claim 176, wherein said panel comprises at least 50 clonal cells



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181. The cell sensor panel of claim 176, wherein said panel further comprises at least one cell line wherein said β -lactamase expression is under the control of response element.
182. The cell sensor panel of claim 174, wherein said panel is present in a two dimensional array.
183. The cell sensor panel of claim 176, wherein said two-dimensional array is formed within a multiwell plate.
184. The cell sensor panel of claim 176, wherein said clonal cells are derived from embryonic or hematopoietic stem cells.--

REMARKS

The Amendment

Applicants have cancelled claims 115, 116 and 177 with prejudice to pursuing that subject matter in this or other applications, and added new claims 144 to 184. The new claims are fully supported by the specification as originally filed and do not introduce new matter. Specific examples of support for individual claims is summarized in the table below.

Claim No	Support
144	Claim 115; page 30, lines 19 to 21; Page 43, lines 26 to 31, pages 45 to 49.
145	Page 22, lines 9 to 30.
146	Page 21, lines 25 to 28.
147	Page 21, lines 28 to 30.
148	Page 21, lines 30 to 31, page 22, lines 1 to 3.